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Effectiveness of Screening Procedures to Determine Delay Versus Regular Kindergarten Entrance

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EFFECTIVENESS OF SCREENING PROCEDURES TO DETERMINE DELAYED VERSUS REGULAR KINDERGARTEN ENTRANCE

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FIELD PROJECT ACCEPTANCE

Acceptance for the faculty of the Graduate College, University of Nebraska, in partial fulfillment of the requirements for the degree Specialist in Education, University of Nebraska at Omaha.

Committee

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Abstract

This study evaluated education outcomes of a psychological screening procedure used by the Omaha Public Schools to assist in entrance decisions for summer and fall born children who were eligible to attend kindergarten. From the available sample of children tested from 1975-1979, 115 were chosen based on availability of a complete set of required scores. There were 71 males and 41 females, with 75 from the suburban area and 26 from the city. Racial composition was 107 Caucasian, 3 Black, 3 Hispanic, and 1 Indian student. One hundred five students had average or above intelligence.

Discriminant analysis showed several significant factors that were able to correctly classify the delayed versus regular entrance groups. The most effective factor appeared to be a measure of IQ, consistent with the major focus of the OPS screening battery. Other factors included the student's home school area, and achievement scores on the California Achievement Test (CAT), especially the reading subtests. There were indications that the type of IQ measure, WPPSI or Binet, may be an important factor,

along with the kindergarten CAT tests, in best discriminating between these two groups.

Overall, both groups of subjects, delayed and regular entrants, showed positive outcomes at school in kindergarten through third grade, regarding academic achievement, retention rates and referrals to special education. The regular entrants, typically achieving less well academically than their older classmates, actually performed better on the CAT than the delayed entrants and the OPS population of children in their grade range in this study. Results indicated the screening battery was effective in differentiating these summer and fall born children for regular or delayed school entrance.

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Chapter I

The typical American child of a generation ago began formal schooling in a kindergarten program the year he/she turned five years old. Kindergarten was viewed as a transition from the home to formal education, with an emphasis on socialization and learning through play (Charlesworth, 1989). No specific entrance behaviors were expected or demanded, with teachers adjusting the curriculum to a wide range of needs. Each state generally stipulated a date beyond which a child would have to wait until the next fall to enter school. These dates were typically in the latter part of the calendar year. All children who were eligible began school at five, with some seeking to enter after the cut-off date.

Comparing this simple approach of the past to the current approach to kindergarten entrance suggests major changes in philosophy have occurred. The research literature in kindergarten entrance can be organized into three main stages or areas of research that coincide with these changes in philosophy. Review of the literature will be organized into the following three areas:

1) an initial focus on determining readiness and entry guidelines. This included the formal testing of early entrants or children seeking exception to stipulated age guidelines, with a concurrent interest in providing developmental data to delineate the optimal cut-off date for kindergarten entrance;
2) a change in research focus from determining readiness and optimal entry age to documenting the negative effects of early entry and being one of the youngest children in a class; and
3) the emergence of resulting current trends away from early entrance of ineligible children to the opposite position of voluntarily delaying the entrance of eligible children. A concurrent focus away from determining a child's readiness for school to a new focus on adapting the school curriculum to meet the developmental needs of all eligible five year olds was also noted.

Determining Entry and Readiness Guidelines

Research from the 1960's to the early 1980's focused most heavily on determining the effectiveness

of age guidelines in determining school readiness, with an emphasis on the early entrant population (Diamond, 1963; Dietz & Wilson, 1985; and Hall, 1963). During this time period, early entrance was sought for children, especially those who were bright. Early entrance often implied an advanced intellect and was requested by some parents for that reason. This is similar to Bredekamp and Shepard's (1989) assertion that skipping a grade was a status symbol in that time period.

Age of entry guidelines differed widely between states with up to six months difference in the stipulated cut-off age for school entry. Developmental research focused on finding the optimal cut-off age that would ensure positive school outcomes for children.

A critical period of readiness was suggested, before which reduced performance would be more likely. This was a special concern regarding children born in the latter part of the calendar year (Sweetland & Simone, 1987). Langner, Kalk, and Sears (1984) estimated that using a kindergarten entrance cut-off date in September, October, or November would result in 33% of the boys not being ready for school. A cut-off

date in December, January, or February would result in 50% of the boys and 25% of the girls not being developmentally ready for school. International studies suggested children would benefit from entrance into formal schooling as late as age seven (Austin & Postlethwaite, 1974). Manners and Manners (1975) even suggested an age of entry of eight to ten years.

No optimal age of entry or cut-off date was ever conclusively determined. In fact, the search for the optimal entry date may not be worthwhile as, regardless of the cut-off date, there is always a group of children who will be many months younger than the oldest children in a class. There is some evidence that the absolute age of kindergarten entrance is not the critical factor, but the relative age span of children compared to their classmates. Weinstein (1968-1969) and Braymen and Piersel (1987) support this view. They described youngest children as being at a disadvantage if too great an age variation exists.

Research to determine the school readiness of early entrants indicates that any one specific variable such as age or sex will not be an effective criterion for school readiness. A combination of instruments or a screening battery that includes a test of

intelligence or mental abilities, informal academic and social/emotional measures, and natural observation of the child appears to be the best approach to determining school readiness at this time (Braymen & Piersel, 1987). Braymen and Piersel also suggested a trial entrance period to enhance the determination of readiness and the successful placement of early entrants.

Further guidelines to determine school readiness for early entrants were suggested by Proctor, Block, and Feldhusen (1986), who provided 12 guidelines to aide in early entry determinations. These guidelines included differential IQ requirements, with higher IQ's required for the youngest children; requiring a comprehensive psychological evaluation consisting of a measure of intellect, academic readiness, and social/emotional maturity; and requiring a health screen and a test of motor coordination. Determination that the child doesn't feel pressured to go to school; that the receiving teacher has a positive attitude towards younger students; and the use of a six week trial period are more positive suggestions provided by these authors. These criterion are specifically aimed

at early entrants and have not yet received empirical support.

A supplemental issue in determining school readiness is the discussion of the types of instruments to use in determining current readiness and predicting future school success. This issue has received much research attention, summarized by Vacc, Vacc, and Fogelman's (1987) statement of the need for instruments in education that can screen large numbers of children and accurately predict school achievement. The lack of consensus on the type of test or the optimal test to use in screening school readiness was made evident by Joiner's (1977) finding that 151 different tests or procedures were used in screening children for developmental information. Most of these reported measures were locally developed and lacked reliability and validity findings.

The most common testing approaches are developmental testing, intelligence testing, or a combination or battery approach. Developmental testing is sometimes used to determine school readiness. It provides a global developmental maturation assessment which often yields a developmental age (Sterner & McCallum, 1988). The most common tests of this type

are various forms of the Gesell, such as the Gesell Developmental Exam. Gesell's tests have received much research attention to verify their usefulness. However, the majority of related research has shown they do not make a significant or reliable contribution to predicting school readiness or later academic achievement (Sterner & McCallum, 1988; Bear & Modlin, 1987; and Meisels, 1987).

The most widely used instruments in school readiness testing appear to be standardized intelligence tests that assess general cognitive ability, such as the Wechsler Pre-School and Primary Scales of Intelligence (WPPSI), and the Stanford-Binet. They continue to be the most statistically valid and reliable intelligence measures. There appears to be no current direct research regarding the usefulness of the WPPSI versus the Stanford-Binet in the specific area of school readiness. They both appear to be accepted and possibly interchangeable methods of determining an IQ. Many states mandate a standardized IQ measure, especially for early entrants, with either of the above tests acceptable. This is true for Nebraska, with a required IQ score at or above the 90th percentile before a child can be admitted to school as an early

entrant. The McCarthy Scales of Childhood Abilities (Fund, Sterner, & Fogelman, 1987) and the Developmental Indicators for the Assessment of Learning (DIAL) (Vacc, Vacc, & Fogelman, 1987) have also shown a positive contribution to determining school readiness and predicting later academic achievement. Some type of standardized intelligence test appears to be an essential component of early entry and school readiness testing. Further research is needed to determine if differences exist between these IQ measures in their ability to predict school readiness.

In summary, this area of research suggests determining school readiness should be based on a combination of instruments, with data gathered from a variety of standardized and informal sources. As every screening battery will have some false positives and negatives resulting in incorrect identification of some students' readiness, the use of professional and parental judgment to make the final decision in each case is recommended. One result of the search for an optimal entry age and the best methods to evaluate children for school readiness has been a generalization from just determining the readiness of early entrants,

to a more widespread practice of determining the school readiness of many pre-kindergarten children.

Negative Effects of Being Youngest in Class

Almost from the beginning, research regarding early entrance and school readiness reflected negative educational outcomes for some children who entered school early. With the focus of studies on delineating the optimal age that would be necessary for children to have academic, social, and emotional success in school (Braymen & Piersel, 1987), it became clear that these were some of the specific areas where early entrants and other eligible children born in the latter part of the calendar year were having the most difficulty. These children, who ended up the youngest in their class, showed the "youngest effect", a term used by Bredekamp and Shepard (1989) to describe the lower academic and social/emotional progress of younger children in a classroom in relation to their older classmates. The youngest effect was related to the belief that more negative outcomes were likely for these youngest children in their school years and later life.

Several research indicated that younger children did not achieve as well academically. Green and Simmons

(1963) made conjectures about the probable performance of early entrants if they had followed regular entrance guidelines. They concluded that the early entrants were approximately seven months behind their current classmates by fourth grade and only three months ahead of same age peers who had been in school one year less. This trend of a lack of academic benefit of early entrance was supported by Sweetland and Simone (1984) with their study of children born in October through November. The results of their study indicated an association with early entry and lower academic achievement throughout grades one through four. Lower academic achievement for younger entrants with October through December birthdays in grades one and four was also found by Breznitz and Teltsch (1989).

There are indications that differential academic achievement for younger children gradually disappears. Davis, Trimble, and Vincent (1980) showed lower achievement for younger children in grades one through four in reading and langage. However, only a difference in reading remained by eighth grade. This later disappearance was supported by Langner, Kalk, and Sears who evaluated data on math, science, and reading in grades four, eight, and eleven. A comparison of

older and younger peers showed significant differences in academic achievement at fourth grade with a decrease by eighth grade, and the disappearance of any effects by eleventh grade.

Not all studies have found negative academic achievement for the younger children in a class. Dietz and Wilson (1985) found no effect of age difference in achievement of students at kindergarten, second, and fourth grade. These authors suggest parents and educators may be too cautious in delaying entrance of children into school.

Research on youngest in class children and early entrants suggested they were at a disadvantage for social and emotional adjustment in addition to academic concerns (Weinstein, 1968-1969). There was evidence they showed more adjustment problems, with younger boys being at particular risk compared to girls and older entrants (DiPasquale, Moule, & Flewelling, 1980). Another study done in Ohio, which used September first as a cut-off date, reported a long term correlation between birth month and suicide. As reported in May and Welch (1985), Uphoff and Gilmore found both males and females born in July to September, and consequently youngest in their classes at school, were more likely

to commit suicide. Based on data from the Ohio coroner's office, 83% of female youth suicides, and 45% of male youth suicides had birthdays between July and September. Students with these birthdays should represent 33% of the population. The authors hypothesized that more stress in school from being the youngest in the class may be correlated with these subsequent suicides.

Teachers and principal evaluated early entrants more negatively and reported more problems in the emotional and social areas (Braymen & Piersel, 1987). Peer ratings also showed less social acceptance of younger children in the classroom. This lack of social acceptance was related more to indifference than to negative relating (Breznitz & Teltsch, 1989). The younger children in Breznitz and Teltsch's study were least likely to score negatively or positively on peer sociometric measures. The authors interpreted scores in the middle range as indifference. They further stated that the youngest children suffered doubly by not being among the good achievers and felt more anxious and lacking in strong positive regard from peers. In their two part study of the same children at first and fourth grade, differences in social/emotional

effects were still noted in fourth grade, with the less anxious children in fourth grade having been the most popular first graders. Their factor analysis showed self-image was related more to academic than social/emotional adjustment in first grade, with the reverse true in fourth grade. The authors suggested that poor social performance seemed to increase anxiety and placed greater stress on the academic learning of the youngest children. Weinstein (1968-1969) also conducted peer sociometric measures which showed that the younger children in the class received fewer positive nominations and more negative nominations than the older children in the class.

A third area of concern for the youngest children is in the use of extra educational interventions such as referrals for special education or psychological assistance with learning or behavior problems. Seventy-seven percent of the boys and 80% of the girls retained in elementary school were the youngest in the class according to Hall (1963). This is consistent with Langner, Kalk, and Sears' (1984) finding that the majority of retained children in their research were the youngest in the class. Being born later in the year was also associated with being referred to special

education and labeled learning disabled (Diamond, 1983). Boys in particular were referred to psychological services more often than girls or non-early entrants (DiPasquale, Moule, & Flewelling, 1980).

In summary, the differential outcomes negatively affecting younger children in the classroom in academic achievement, social/emotional adjustment, and the need for more educational interventions are supported by the majority of research findings. It should be noted that many of the subjects were early entrants or children born in the fourth quartile of the year who typically would not be in a classroom. It is also noteworthy that, although many of the results are significant, they are not always substantial. The documented trend of academic achievement differences disappearing over time is encouraging. However, in many studies the effects did not disappear until after fourth grade, and some not until eleventh grade. This fact in relation to the carryover emotional effects of being behind academically (Breznitz & Teltsch, 1989) remove some of the positive connotations of this trend.

Resultant Current Trends

The original simple procedures of the past of having children start school at age five, with

stipulated cut-off dates, and screening of early entrants has basically remained in effect. The change has been in parents' and educators' perceptions and responses to kindergarten entrance, especially age of entrance. Regular entrance at age five, and early entrance are not viewed as positively with voluntary delay of eligible children now more common. There appears to be a correlation between the dissemination of the literature on the negative effects of early entrance into school and the youngest effect, and the voluntary delaying of the school entrance. Parents continue to want to have their children screened before kindergarten entrance, but the focus is more often on determining if they will benefit from waiting another year, rather than on obtaining early entry. The "popular wisdom" has now become that if a child is the oldest in the class, he/she will be more successful in school and also in later life than those who are the youngest (Bredekamp & Shepard, 1989). Bredekamp and Shepard further stated that it is ironic that in the past, early entry into school was a status symbol, but that has now been replaced with "red-shirting" or voluntary delay as a sign of enlightened affluence.

It appears that this trend of voluntary delay of entrance is becoming a dominant one, especially for summer and fall born children. Unfortunately, there is little concrete research on this trend. Bredekamp and Shepard (1989) and Shepard and Smith (1989) wrote eloquently on this trend, and related it to several factors, including the raising of curriculum standards in kindergarten. These higher curriculum standards are seen partially as a response to upper grade curriculum being imposed on the lower grades, and partially in response to the "Back to Basics" movement with its emphasis on rote learning and teacher accountability based on students' standardized achievement scores. They described a potentially damaging effect of this voluntary delay, with its potential to widen the gap between middle class and disadvantaged children in school performance. The trend for middle class children to wait a year before entry when they are basically ready to enter at age five, results in their entering school at age six more advanced academically than the regular five year old entrants. In addition, these middle class children are even more advanced as a result of private pre-school training. This is an option disadvantaged children do not have. Delaying

their entry without alternative programs or in-home enrichment only makes it more likely they will fall further behind. Economic issues also make it less likely that disadvantaged or low income parents will voluntarily delay the school entrance of their children.

Voluntary delay of entrance and higher kindergarten retention rates indicate more children are unable to meet the current kindergarten demands. As more children are unable to meet the increased demands of kindergarten, Charlesworth (1989) described four institutional responses to this problem. The first solution is to place more emphasis on kindergarten preparation through HeadStart programs, state-funded preschools, and private preschools. A second response is to delay entrance into kindergarten in the hope the child will mature or become more ready to learn. As mentioned above, this delay may help some children, but can be particularly detrimental to those without other means of learning and enrichment. A third response is to rely on developmental placement as a result of determining a developmental age. This approach lacks both good instruments and indications of effectiveness. A fourth approach is continuous progress, or multiage

grouping, with two or more grades combined and children moving within the grouping according to their own learning rate. The emphasis is on adapting the curriculum to the child and not the child to the curriculum. Children in this multiage grouping approach can complete a three year segment in two to five years, depending on rate of learning.

This last focus of changing the schools to meet the needs of all five year olds as they enter school is a second of the current kindergarten entrance trends. This approach was supported by Braymen and Piersel (1987) and Dietz and Wilson (1985). The pendulum appears to be swinging away from the total emphasis on selecting and bracketing children by any system of test procedures to putting the emphasis on change within the system to serve the needs of the children at the developmental level they have reached when they are legally able to attend school. This trend of focusing on system change also suffers from a lack of solid research support, as did the trend of increasing voluntary delay of entry into kindergarten.

In summary, there appears to be a correlation between the dissemination of negative research findings regarding being youngest in the class and the current

trend of voluntary delay of kindergarten entrance by eligible children. As described by Bredekamp and Shepard (1989) other social trends, especially using standardized student achievement tests to evaluate teacher performance, have placed so much academic emphasis in the curriculum that more and more children are becoming kindergarten failures. Parents then choose to delay entrance in the hopes it will lessen the chances of that failure. They also turn to pre-kindergarten evaluations more often to seek assistance with that decision. Concrete research to validate the trends of voluntary delay of entry, and adapting the kindergarten curriculum to the developmental needs of the child is now needed.

Purpose of the Study

The purpose of this study was to describe and analyze the pre-kindergarten entrance screening procedures of a midwestern metropolitan school system regarding recommendations for regular or delayed entrance of summer and fall born children eligible to start school. One goal was to describe the screening measures used and the type of children who were referred for this service. Based on the literature, it

was expected the majority of the sample would be male, Caucasian, and suburban.

A second goal was to compare the educational outcomes of the children who followed the recommended options of regular or delayed entrance to school. Outcome measures to be evaluated were rates of referral to special education, retention rates, and mean scores on the CAT reading and math subtests for kindergarten through third grade. It was expected that the regular entrants, being younger in class, would demonstrate poorer academic achievement and higher referral and retention rates than the delayed entrant children.

A third goal was to ascertain which variables best discriminate between the groups of regular and delayed entrance children. It was expected that IQ measures and kindergarten CAT scores would best differentiate between the two groups.

Chapter II

METHODS

Subjects

Subjects in this study were 115 children attending Omaha Public Schools in Omaha, Nebraska. They were chosen from the total pool of children who had received pre-kindergarten psychological examinations through the school system to assist in entrance decisions. Study subjects were chosen from this total pool on the basis of their date of birth, with the specific parameters of June 15 to October 15, between the years of 1975 to 1979. These dates were chosen to represent summer and fall born children who were eligible to enter school at age five, in accordance with Nebraska's cut-off date of October 15. These years were chosen to encompass the availability of the CAT scores for first through third grade. The CAT tests were first administered in the district in 1981, so children born in 197t were the first ones to be administered this test. Chilren born in 1979 were the last to complete the test at the third grade level. This necessity of having CAT scores from first through third grade was the final screening requirement. Subjects' kindergarten CAT scores were

included for analysis when available. The subject sample size would have been too small if the kindergarten CAT scores had been required for all subjects as originally planned. To check for the effect of CAT score requirements in choosing subjects, a scan of the total population of pre-kindergarten-tested children for 1979 indicated that 50% of the sample with correct birth date parameters were excluded because of missing CAT scores for grades one, two, or three.

A summary of subject characteristics indicated males were overrepresented with 71 males and 44 females chosen. The subject population was 93% Caucasian, 2.6% Black, 3.5% Hispanic, and .9% Indian. Minorities were underrepresented according to district percentages. The majority of the subjects participated in regular school level programs (84%), with 16% receiving free or reduced lunches. Arbitrarily dividing subjects into city versus suburban areas based on their high school attendance area resulted in 65% in the designated suburban area, and 35% in the designated city area. Of the 115 subjects chosen, 8.7% had IQ's in the low range (below 89), 47% in the average range (90-110), and 44.3% in the above average range (110+). Retentions

occurred in 10.4% of the subjects. Referrals for a special education evaluation were made for 13.5% of the subjects.

Comparisons wre made of the subject characteristics to all students in the pre-kindergarten pool, for the years 1981, 1982, 1983 and 1985. Data for 1984 was not readily accessible at the time of the study. The subject sample had relatively more males (61.7% to 55%). Chosen entrance options of regular or delayed entrance were comparable (40.9% to 41%). The subjects were retained more often in kindergarten through third grade than the regular student population (10.4% to 4.3%). This is inconsistent with the subjects' superior performance on the CAT test at every level for both reading and math. Using normal curve equivalents, the means of the subjects' CAT reading scores were 115, 114, and 114 for grades one through three respectively. Mean reading scores for the OPS student population was 107 for grades one through three. Subjects' means for CAT math scores were 119, 114, and 116 for grades one though three, with the OPS students' means of 110, 107, and 106 for grades one through three.

Instruments

In the pre-kindergarten testing battery, the major instrument used in all cases was a standardized intelligence measure. The Wechsler Pre-school and Primary Scales Intelligence Test was used 66% of the time, and the Stanford-Binet 30% of the time. Both tests are well researched and standardized. In fact, each is considered a standard in the field of intelligence testing. The Beery Developmental Test of Visual-Motor Integration was given 58% of the time, with the Peabody Picture Vocabulary Test administered 24% of the time. A final component in the typical OPS pre-kindergarten psychological battery was a parent conference, recorded in 46% of the sample. The main focus of the parent conference was a review of test results with the parent and a discussion of recommendations for school entrance based on these testing results.

Besides the psychological test data, the other major data source was test information collected from the teacher-administered CAT. The CAT is a series of norm and criterion referenced tests that are used to assess a variety of academic skills in school children from kindergarten through twelfth grade. The reading

and math subtests were used in this study. The math subtests measure computation, concepts, and application. The reading subtests measure phonics analysis, vocabulary, structural analysis, and comprehension. These tests are widely used and have long been regarded as well developed achievement series (Vacc, Vacc, & Fogelman, 1987). CAT scores were available for all subjects from first through third grade, with approximately 50% of the sample also having kindergarten CAT scores. National percentiles on the CAT were converted into normal curve equivalents (NCE), a linear transformation of normalized *z* scores. Scores were converted through the use of tables provided in the BASIS test manual (BASIS, 1983). Resulting scores have a mean of 100 and a standard deviation of 15.

Procedures

This study was based upon archival data in computerized form available for individual students in the Omaha Public School system. Subject consent was not required as student data was never identified by individual student, except to the main investigator. This study was reviewed and approved by the University of Nebraska Institutional Review Board.

Data to be analyzed included the results of the pre-kindergarten testing that was completed the summer the subjects turned five, CAT scores for kindergarten through third grade and demographic variables such as sex, race, home school, birthdate, and entry age. The majority of these children were originally referred for pre-kindergarten testing by their parents to help them make school entrance decisions. The study sample was distinct from early entrants. These early entrants are students whose birthdays are past state guidelines. They are tested to see if they demonstrate the superior performance necessary for early entrants to be allowed to attend school. The study sample was also distinct from other children who are referred because serious educational or behavioral problems are suspected. The study children were all eligible to attend kindergarten at age five, as their birthdays were on or before October 15, and they were not suspected of having serious developmental problems.

Broad classifications of socio-economic status were determined by use of home school area and lunch status. Each subjects' elementary home school was clustered by high school attendance area and then arbitrarily assigned to one of two designations, city

or suburban. The city area contained five of the seven high school attendance areas and the majority of the student population. The suburban area included two high school attendance areas on the west and northwest boundaries of the district that encompassed the majority of the suburban areas of the district. The Nebraska state line provides the eastern boundary and other school districts form the southern boundary of the district. It is recognized that there is some overlap between the two types. City areas overlap the suburban areas more often than the suburban areas overlap the city. Students were categorized into two groups on the basis of lunch type: those who received free/reduced lunch, implying lower socioeconomic status; and those who received regular priced lunches. These lunch categories are the same as those used by the federal funding of supplemental reading programs.

There was also a subset of collected data related to the psychologists' recommendations for age of entrance and whether they were followed. Children who did not follow recommended guidelines were removed from most analyses in this study, as one main purpose of the study was to evaluate results of the pre-kindergarten screening recommendations.

Retentions and referrals for special education evaluation were also documented. A child with a formal written request for special education evaluation was placed in the SPED referral group. The child did not have to be placed in special education to be included. Children labeled retained were those who had to repeat any year kindergarten through third grade. It included those children who were sent to pre-first or alternative kindergarten programs, as those programs are essentially retentions that add another year to a student's educational career.

Data analysis included descriptive and discriminant methods. Frequency measures were obtained for the study sample as a whole, plus comparison data for the delayed and regular entrance groups. A two-group stepwise discriminant analysis was employed, using the Wilks' method provided by the SPSS-X DISCRIMINANT program, to select the best predictor variables to discriminate between the delayed and regular entrance groups. As a measure of IQ appeared to be the major contributor to the screening battery determining entrance recommendations, further discriminant analyses were performed to analyze potential differences in discriminative ability of the

two IQ measures used, the WPPSI and the Stanford-Binet. Separate discriminant analyses were also performed on the subsets of children with and without kindergarten CAT scores available. These were performed because of the research findings that negative academic achievement effects are most pronounced in the earliest years of school and tend to disappear as the children are in school longer. This implies the kindergarten scores would be the most discrepant, and better able to discriminate between the groups than the later CAT scores.

Chapter III

RESULTS

Descriptive Analysis

The first goal of this study was to describe the screening measures used and the type of children referred for pre-kindergarten entrance screening. Descriptive analyses based on frequency measures and cross tabulations indicated the screening procedures most commonly used were the WPPSI and Stanford-Binet intelligence tests. Supplemental tests included the Beery Developmental Test of Visual-Motor Integration (VMI) and the Peabody Picture Vocabulary Test (PPVT). Parent conferences were held in approximately half of the screenings.

Data regarding the reason for the recommendation of delayed entrance showed immaturity as the stated reason 44%, speech concerns 5%, other reasons 6%, and no reason given in 45% of the cases. Evaluation of the trends in percentage of eligible children recommended for delay showed fluctuations from 36% to 79%, but no clear trend of increase or decrease from 1981 to 1985.

The type of child typically referred for the screening evaluation was male (67%), Caucasian (93%),

lived in the suburban-designated area (65%), had an average or above average IQ (91%), and participated in the regular level program (85%). Few summer and fall born minority children were referred for screening. Children with above average IQ's were over-represented. The broad SES measures of school area and lunch type suggested the majority of screened children were middle class.

The second goal was to compare the educational outcomes of the students who followed the regular or delayed entrance options. This was done by descriptive analyses based on frequency measures and cross tabulations. Results indicated that the majority of the 115 pre-kindergarten tested children were recommended for delayed versus regular entrance, 56.5% to 43.5%. Actual entrance patterns showed 59.1% delayed, and 40.9% regular. This is comparable to the pattern of the 98 students who followed the psychologists' recommendations, and formed the core sample of this study. This core group chose 59.2% delayed, and 40.8% regular entrance.

The independent variables of sex, race, and lunch type show similar parentage breakdowns in both the regular and delayed entrance groups. Both groups had

more males than females, 62.5% to 37.5% regular entrants and 60.3% to 39.7% delayed entrants respectively. Racial proportions were also comparable with Caucasian subjects representing 92.5% of the regular and 93.1% of the delayed entrants. The small number of minority students in the sample prevented further meaningful analysis of this area. Regular lunches were received by approximately 85% of both groups.

Differences between the groups were apparent in IQ, rates of referral to special education, and month of birth. Slight differences were noted between the groups in school area and retention rates. Differences in average IQ scores were noted, with the regular entrant group averaging 113.95 standard score points (sd=14.59), and the delayed entrant group averaging 102.09 standard score points (sd=12.15). Although both groups contained the same approximate number of children with low IQ's (below 90ss), the regular entrance group contained more children in the above average range to account for the superior IQ score average. The dependent measure of special education referral rate showed more negative effects for the delayed group. Within the delayed group, 19% of the

children were referred for special education assessment compared to 10% of the regular entrant group. Differences in month of birth were also noted with the delayed entrants clustering in September and October (60.2%) and the regular entrance birthdates clustering in July and August (52%). Only slight differences in retention rates were observed between the two groups, with delayed children retained 8.9% of the time, regular children 10% of the time. Neither group compared well to the general OPS population retention rates of 4.3% overall for children in kindergarten through third grade. However, looking at the 17 children in the study who did not follow the psychologists' entry recommendations, 50% of these children were retained when they entered at five contrary to the recommendation to delay until age six. The regular entrance children achieved higher mean academic achievement scores on the CAT than the delayed entrance children at all grades and on both the reading and math subtests. The discrepancy between the scores increased in favor of the regular children from kindergarten to third grade in both the reading and math subtest areas (see Table 1).

Table 1

Means and Standard Deviations of Regular and Delayed Entrants on the California Achievement Tests

	Grade							
	K		1		2		3	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
				CAT Reading Tests				
Regular	117.62	12.81	116.83	11.20	116.90	13.09	117.65	10.94
Delayed	116.13	12.07	114.72	13.42	111.28	15.32	110.29	12.31
				CAT Math Tests				
Regular	115.24	13.58	119.58	11.01	113.65	11.57	118.10	12.83
Delayed	114.29	11.67	118.83	10.99	112.84	12.65	112.67	14.41

A further delineation of the achievement outcomes between these two groups of children was shown by the percentages of children in each group with below average academic achievement as measured by the CAT (below 90ss or the 25th percentile). The majority of children had positive achievement outcomes in the average or above average range. More children in the regular group had below average CAT scores in kindergarten and first grade, especially in math. However, they demonstrated fewer problems than the delayed entrants by second grade. Conversely, the delayed entrants had fewer initial problems the first two years, but showed an increase in children with below average achievement by grades two and three (see Table 2).

Some sex differences were apparent in this study. More males were referred for entry screening, (62% of subjects), but there were no sex differences in recommendations for regular or delayed entry. Males were retained at a higher rate than females (78% to 22%), and referred to special education at a higher rate (67% to 33%). Males with low to average IQ's, received free/reduced lunch were most likely to be

Table 2

Percentages of Regular and Delayed Students Achieving Below Average CAT Scores

	Grade			
Group	K	1	2	3
		CAT Reading		
Regular	4.8	2.5	2.5	0
Delayed	0	0	8.8	8.8
		CAT Math		
Regular	9.5	2.5	5.0	2.5
Delayed	0	1.7	7.0	6.9

retained, with regular entrants retained slightly more often than delayed.

Retained students represented 9.2% of children following the psychologists' recommendations, including 10% of regular entrants and 8.6% of delayed entrants. The retained children as a group were 67% suburban, 78% male, 33% reduced/free lunch status, 44% referred to special education, 89% Caucasian, and 11% Indian. The mean IQ was 96.56 (sd=17.59), with 33%, 56%, and 11% in the below average, average, and above average IQ ranges respectively. Retained students had lower mean CAT scores than the non-retained students, with their lowest areas second and third grade reading (m=96.56, sd=9.33, m=98.11, sd=12.10). Percentage of retained students with below average CAT scores ranged from 11% to 33% with the majority showing satisfactory academic achievement.

Students referred to special education represented 13.9% of the original sample of 115, and 15.3% of the 98 children followed the entrance recommendations. Referred students as a group were 87% Caucasian, 6.7% Indian, and 6.7% Black. Free/reduced lunches were received by 47%, with 67% male, and 60% from the city area. Mean IQ was 95.60 (sd=10.24), with 27%, 67%, and

6% in the below average, average, and above average ranges, respectively. Referred students had lower mean CAT scores than non-referred students with their weaker areas second and third grade reading (m=96.40, sd=12.60, m=98.13, sd=16.45). Thus, students from the city area who received free/reduced lunches with low to average IQ's and were having difficulty with reading were more likely to be referred for special education. However, the majority of these students had average to above average CAT scores with 74% to 100% of scores in the average or above average range for kindergarten through third grade.

Discriminant Analysis

The third goal was to determine which variables best discriminated between the two groups of regular and delayed entrance students. This was done with a stepwise discriminant analysis, using Wilk's method, using the sample of 98 children who followed entry recommendations. The criterion groups were regular and delayed entrants. The predictor variables entered into the discrimination analysis were sex, school age, lunch type, IQ, CAT math, and CAT reading scores for kindergarten through third grade, and included 98 cases. The stepwise discriminant analysis selected

school area and lunch type (the SES variables), IQ first and second grade CAT and third grade CAT math scores as making a significant contribution to the discrimination of the regular versus the delayed entrance groups of children. Means and standard deviations are presented in Table 3. The discriminant analysis indicated that a weighted combination of these variables would correctly classify 75% of those children who were recommended for delayed or early entrance (see Tables 4 and 5). A moderately significant canonical correlation coefficient was obtained ($r=.577$, $p = .001$) between the sets of variables.

Further analyses were completed to explore the differential classification ability according to the type of IQ measure used, and whether or not kindergarten CAT scores when included produced more positive results. Two further stepwise discriminant analyses using only the students tested with the WPPSI showed differences in classification accuracy based on the presence or absence of kindergarten CAT scores. Means and standard deviations for these two analyses are presented in Tables 6 and 7. The first analysis using the WPPSI scores with CAT scores from first

Table 3

Means and Standard Deviations of Regular and Delayed Groups on Test Measures

Combined WPPSI/Binet IQ Scores Without Kindergarten CAT Scores

	Regular		Delayed		Total	
Test	Mean	SD	Mean	SD	Mean	SD
IQ Binet/WPPSI	113.95	14.60	103.00	11.62	107.71	14.01
CAT 1-READ	226.83	11.20	114.79	14.01	115.66	11.42
CAT 1-MATH	119.58	11.01	118.70	11.42	119.08	11.99
CAT 2-READ	116.90	13.09	111.09	15.75	113.59	14.87
CAT 2-MATH	113.65	11.57	112.62	13.04	113.06	12.37
CAT 3-READ	117.65	10.59	109.94	15.50	113.26	14.07
CAT 3-MATH	118.10	12.28	112.62	14.59	114.98	13.85

Table 4

Number of Cases Correctly Classified by Discriminant Analysis

Combined WPPSI/Binet IQ Scores Without Kindergarten Scores

		Regular		Delayed	
Actual Membership	Number	Number	Percentage	Number	Percentage
Regular Entrance	40	28	70	12	30
Delayed Entrance	56	12	21	44	79

Total Percent of Grouped Cases Correctly Classified: 75.00

Table 5

Canonical Discriminant Function Coefficients

Combined WPPSI/Binet Scores Without Kindergarten CAT Scores

Variables	Standardized Coefficients	Unstandardized Coefficients
School Area	.633	1.441
Lunch Type	.382	1.090
IQ (WPPSI/Binet)	1.129	.087
1 CAT READ	-.511	-.040
2 CAT READ	-.511	-.041
3 CAT MATH	.591	.043
(Constant)		-80.68

Table 6

Means and Standardized Deviations of Regular and Delayed Groups on Test WPPSI IQ Scores Without Kindergarten CAT Scores

	Regular		Delayed		Total	
Test	Mean	SD	Mean	SD	Mean	SD
IQ-WPPSI	112.59	15.61	102.21	10.79	106.98	14.11
1 CAT READ	116.62	12.13	114.35	14.15	115.40	11.86
1 CAT MATH	119.97	11.62	118.27	11.86	119.05	11.68
2 CAT READ	116.97	14.43	109.71	15.56	113.05	15.37
2 CAT MATH	113.48	12.70	110.35	13.86	111.79	13.32
3 CAT READ	118.83	11.14	110.09	15.42	114.11	14.21
3 CAT MATH	118.79	12.82	112.76	14.84	115.54	14.16

Table 7

Means and Standard Deviations of Regular and Delayed Groups on Test Measures

WPPSI IQ Scores With Kindergarten CAT Scores

	Regular		Delayed		Total	
Test	Mean	SD	Mean	SD	Mean	SD
IQ (WPPSI)	112.44	19.44	101.45	10.82	106.08	15.82
K CAT READ	115.75	14.15	117.55	12.67	116.79	13.16
K CAT MATH	114.94	14.67	112.68	11.93	113.63	13.01
1 CAT READ	113.50	13.31	114.55	15.14	114.11	14.22
1 CAT MATH	120.00	12.65	118.55	12.86	119.16	12.63
2 CAT READ	115.88	16.12	110.41	14.73	112.71	15.36
2 CAT MATH	112.63	14.92	111.27	14.67	111.84	14.59
3 CAT READ	119.25	12.79	110.86	12.72	114.39	13.26
3 CAT MATH	117.88	14.59	114.86	13.07	116.13	13.62

through third grade included 64 cases. It showed a weighted combination of sex, school area, IQ, and CAT READ (1, 2) correctly classified 75% of the children (see Tables 8 and 9). The canonical correlation was 0.578 ($p = .0002$). Both results are comparable to the original discriminant analysis. Using the 38 WPPSI tested children with available kindergarten CAT scores in the discriminant analysis showed a weighted combination of IQ, retention, and five of the six CAT scores correctly classified 89.47% of the delayed versus regular entrance children (see Tables 10 and 11). The canonical correlation was to .737 ($p = .0015$).

Analyses utilizing the Binet tested children with and without kindergarten CAT scores produced less clear results because of the smaller number of cases used. Results of the Binet tested children with kindergarten CAT scores are not reported as the canonical correlation could not be calculated on the 13 available cases. Means and standard deviations of test results for the 30 Binet tested students without kindergarten CAT scores are presented in Tables 12. This analysis showed a weighted combination of sex, school area, referral for special education, retention, and second

Table 8

Number of Cases Correctly Classified by Discriminant Analysis

WPPSI IQ Scores Without Kindergarten CAT Scores

		Regular		Delayed	
Actual Membership	Number	Number	Percentage	Number	Percentage
Regular Entrance	29	20	69	9	31
Delayed Entrance	35	7	20	28	80

Total Percent of Grouped Cases Correctly Classified: 75.00

Table 9

Canonical Discriminant Function Coefficients

WPPSI IQ Scores Without Kindergarten CAT Scores

Variables	Standardized Coefficients	Unstandardized Coefficients
Sex	-.362	-.751
School Area	.717	1.556
IQ (WPPSI/Binet)	.911	.069
1 CAT READ	-.772	.058
3 CAT READ	.467	.034
(Constant)		-7.356

Table 10

Canonical Discriminant Function Coefficients

WPPSI IQ Scores With Kindergarten CAT Scores

Variables	Standardized Coefficients	Unstandardized Coefficients
Sex	-.362	-.751
School Area	.526	1.012
IQ (WPPSI)	1.119	.745
Retention	.561	1.781
1 CAT READ	-1.560	-.108
1 CAT MATH	.652	.051
3 CAT READ	.723	.067
3 CAT MATH	.544	.040
K CAT READ	-.873	-.066
(Constant)		-7.243

Table 11

Number of Cases Correctly Classified by Discriminant Analysis

WPPSI IQ Scores With Kindergarten CAT Scores

		Regular		Delayed	
Actual Membership	Number	Number	Percentage	Number	Percentage
Regular Entrance	29	20	69.0	9	31.0
Regular Entrance	16	14	87.5	2	12.5
Delayed Entrance	22	2	9.1	20	90.9
Total Percent of Grouped Cases Correctly Classified:		89.47			

Table 12

Means and Standard Deviations of Regular and Delayed Groups on Test Measures

Binet IQ Scores Without Kindergarten CAT Scores

	Regular		Delayed		Total	
Test	Mean	SD	Mean	SD	Mean	SD
IQ (Binet)	117.55	11.35	104.42	13.15	109.23	13.90
1 CAT READ	117.36	8.73	115.53	14.17	116.20	12.27
1 CAT MATH	118.55	9.63	119.47	10.85	119.13	10.26
2 CAT READ	116.73	9.25	113.58	16.20	114.73	13.96
2 CAT MATH	114.09	8.38	116.68	10.59	115.73	9.77
3 CAT READ	114.55	8.69	109.68	16.05	111.47	13.84
3 CAT MATH	116.27	11.11	112.37	14.54	113.80	13.32

grade CAT match correctly classified 80% of the regular and delayed entrance children (see Tables 13 and 14). The canonical correlation was 0.704 ($p = .037$).

Variables that appeared most frequently as contributing to correct classification of the two groups of students were: school area (four of five analyses), IQ (three of four analyses), and CAT reading scores (three of four).

Table 13

Canonical Discriminant Function Coefficients

Binet IQ Scores Without Kindergarten CAT Scores

Variables	Standardized Coefficients	Unstandardized Coefficients
Sex	-.362	-.751
School Area	.770	.061
SPEP Referral	-.585	-1.947
Retention	.575	-1.894
2 CAT MATH	-.712	-.072
(Constant)		1.182

Table 14

Number of Cases Correctly Classified by Discriminant Analysis

Binet IQ Scores Without Kindergarten CAT Scores

		Regular		Delayed	
Actual Membership	Number	Number	Percentage	Number	Percentage
Regular Entrance	11	9	81.8	2	18.2
Delayed Entrance	19	4	21.4	15	78.9

Total Percent of Grouped Cases Correctly Classified: 80.00

Chapter IV

DISCUSSION

The first goal of describing the OPS pre-kindergarten screening battery showed IQ, visual-motor integration skills, receptive vocabulary, informal academics, and parent conferences were the main components. Determination of social/emotional status appeared to be based primarily on clinical judgment of informal indicators. As the research literature offers little data on screening eligible five year olds, readiness screening measures have to be generalized from early entrant studies. The OPS screening battery is comparable to those described by Braymen and Piersel (1987) for early entrants, except for the lack of formal social/emotional measures and natural observation. Although nearly all the entrance screens utilized an IQ measure, the frequencies of the supplemental measures such as visual-motor skills, receptive language, and parent conferences were below optional levels. Reliance on IQ to differentiate the regular from delayed entrance recommendations would result in higher mean IQs for the regular entrants, as more students with suspected problems would be recommended for delayed entrance. Results did indicate

higher mean IQ's for the regular entrants. However, both groups had the same percentage students with low IQ's, with the regular entrants having a higher percentage of above average IQ's. This suggests having an above average IQ may have overridden other variables in determining entrance recommendations. Variables other than IQ became more salient for the average and below average IQ children.

Data from this study did not clearly delineate why particular children were recommended for regular or delayed entrance. Although this is partly because of the correlational nature of the study, the lack of specific documented reasons for entrance recommendations was also a problem. The pre-kindergarten testing procedure screened 60% of the children for delayed entrance. Over 90% of the children in both groups had average or above average IQ's. Immaturity was stated as the reason for delayed entrance for almost half of the students, and no reason was given for the other half. As specific instruments were not often used to assess social/emotional factors such as immaturity, these judgments cannot be further analyzed. It is presumed the judgments were based on a combination of the child's social/emotional qualities,

and those qualities required in the child's particular school setting.

Based on the positive educational outcomes for the majority of screened children, it appears the OPS battery is an effective procedure in determining kindergarten entrance options. The addition of further components or more frequent use of the current components may add to its effectiveness.

Practical suggestions evolving from the current study include adding a standardized behavioral measure to the pre-kindergarten screening battery. The Achenbach Child Behavior Checklist and Burk's Behavior Rating Scale are two commonly used measures that are applicable for children of this age. A student's results on one of these measures could be recorded as a pre-determined level of performance. Correlations between these levels and the ultimate recommendation would more clearly delineate the reason for recommendations that rely heavily on social/emotional concerns. Surveys regarding parent concerns about the child's entrance and factors they consider important in making an entrance decision could be easily obtained. This information could help in the decision making process, and also monitor parents' perceptions of the

school curriculum and the reasoning behind their decisions. Surveying the staff to better understand the reasoning behind entrance recommendations would also be useful. If it is decided pre-kindergarten screening of eligible summer and fall born children is a trend the district wishes to support, efforts should be made to improve the current battery with the aforementioned suggestions. The addition of natural observations through the use of trial entry periods or simulated classroom activities would also be beneficial in determining entrance recommendations.

The students referred for pre-kindergarten testing were mainly male, Caucasian, suburban, and middle class. This is in accordance with Bredekamp and Shepard's (1989) findings that the majority of students evaluated for possible delayed entrance were Caucasian, middle class, and suburban. Over 90% of the screened students had average or above average IQ's. As the majority of students in each group did well on the entrance measures, it was harder to determine outcome differences between the groups. The question of how the delayed group would have done if they had started at age five was also unanswered. It is possible they

would have achieved comparable outcomes if they had started at age five.

Results from this study do support the current trend of voluntarily delaying the kindergarten entrance of eligible children, as 60% of the screened children were recommended for delayed entrance. If this delayed entrance is beneficial for the majority of suburban Caucasian children, efforts to involve more minority and disadvantaged children in this process should be encouraged. This should help avoid further achievement disparities that can result when the majority of delayed entrants are white, middle class students.

The second goal of this study was to compare the educational outcomes of the students who followed the recommended entrance options. Results of this study indicated positive educational outcomes for the majority of these summer and fall born students. Follow-up data of their kindergarten through third grade academic achievement scores showed average or above average performance for the majority of these children. Contrary to most research findings of negative effects for young entrants (Sweetland & Simone, 1984; Davis, Trimble, & Vincent, 1980; Breznitz & Teltsch, 1989), the youngest students in this study

outperformed the older, delayed entrant students and the general OPS population for grades kindergarten through third, on both subtests of the CAT. The regular entrants were also referred for special education evaluation less often than their delayed entrance peers, but were retained slightly more often. These findings are also contrary to the expected results of this study, based upon the research literature. These findings suggest negative educational outcomes for young entrants can be reduced through effective screening.

Of the outcome measures, the kindergarten CAT scores, and the CAT reading scores in general best differentiated between the two groups of students. Retained and referred children in particular had their lowest scores on CAT reading. Outcome measures appeared to favor the regular entrants except for retention. The research literature suggested summer and fall born students are more at risk for retention. This study supported that finding as both groups of children were retained more than the general population of OPS students in kindergarten through third grade. However, direct retention comparisons to evaluate results of the screening procedures should be made with

only the fall and summer born OPS students with the same birthdate parameters as the subjects. The lower retention rate of the delayed versus the regular children can also be explained by the reluctance of educators to retain a child who is already old for grade. Further monitoring is needed to document the suggested trends of increased retentions for kindergarten children, purportedly in response to higher academic demands in the kindergarten curriculum. If the district is responding to the trend of changing the curriculum to a developmental model, more attuned to the developmental needs of entering five year olds, kindergarten retention rates should show a decrease.

It is possible that pre-kindergarten entrance screening is counterproductive to the trend of having schools adapt to meet the needs of all eligible five year old children. By recommending delayed entrance to eligible children, especially the apparently select sample that comes for the screening, there is a danger both of widening the gap in skill levels between the disadvantaged children and middle class children, and of allowing schools to continue the increasingly demanding academic curriculum. The trend of voluntary delay of eligible students can potentially be reduced

by encouraging the schools to adapt the curriculum to the developmental needs of all five year olds. More parents would then be comfortable sending their children to school with less worry about negative achievement, social/emotional, and special intervention outcomes. Reducing the emphasis on standardized testing, and curriculum series approaches to teaching skills such as reading would also allow more flexibility in the curriculum and allow all entering children to be more successful.

It appears a decision should be made by the district to either invest in pre-kindergarten screening for all summer and fall born children to improve their successful outcomes in the current curriculum or to adapt the curriculum to meet the needs of all eligible five year olds and decrease the use of pre-kindergarten screening of these eligible children.

The third goal was to determine which variables best discriminated between the groups of regular and delayed entrance children. Variables identified most often by the discriminant analyses as correlating with correct classifications of these students into their respective groups were school area, IQ, and CAT reading scores. These resuls are in agreement with the

descriptive analyses, showing group differences on these variables. Although sample size prevented a full exploration of the issue of the different discriminant ability of the two IQ measures, it appears a difference exists in favor of the Binet. Thus, the choice of IQ instrument appears to be a factor in screening effectiveness, with the Stanford-Binet more able to differentiate between the regular and delayed entrants. One explanation for this is the higher verbal loading of the Binet. These verbal skills may be more highly correlated with school success. Evaluating the effectiveness of the verbal IQ component of the WPPSI may further clarify this explanation. An alternative explanation is that the current district curriculum requires more verbal than nonverbal reasoning for a successful outcome. If verbal skills are perceived as more important, increased use of a receptive language measure such as the PPUT is warranted.

Limitations of this study include the correlational approach that limits the interpretation of findings. Possible sample bias in the types of students who are referred for pre-kindergarten testing, and who were included in the study, is also a problem. For example, these students could be recommended for

delayed entrance more often because of serious problems that caused parents to be concerned and seek the testing originally. Results cannot be reliably generalized to the general population of students. Another limitation is the small sample size used, especially in the discriminant analyses utilizing the IQ and kindergarten CAT scores measures. At most, promising areas of further research can be gained from these results.

Future Directions

Future research suggestions include continuation of the current study, adding in students as their third grade CAT scores become available to provide ongoing monitoring of kindergarten entrance trends and outcomes. Continued monitoring of voluntary delay of entrance and retention rates is especially needed. More indepth statistical analysis to more fully explore the relationships between the variables reviewed in this study is also recommended. Utilization and evaluation of standardized behavioral measures and parent opinion surveys would be useful. Analyzing data regarding age of entry, retention, and referral rates for the general school district population could be used to validate the suggested findings of this study

and monitor actual practices in kindergarten entrance procedures. Further exploration of race and the socioeconomic status variables of lunch type and school area is needed, especially regarding referral rates to special education and retentions. The positive screening results shown for the subject sample needs to be extended to all types of students or a change in emphasis made to a developmentally appropriate kindergarten curriculum that will lessen the chances of failure for all students.

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